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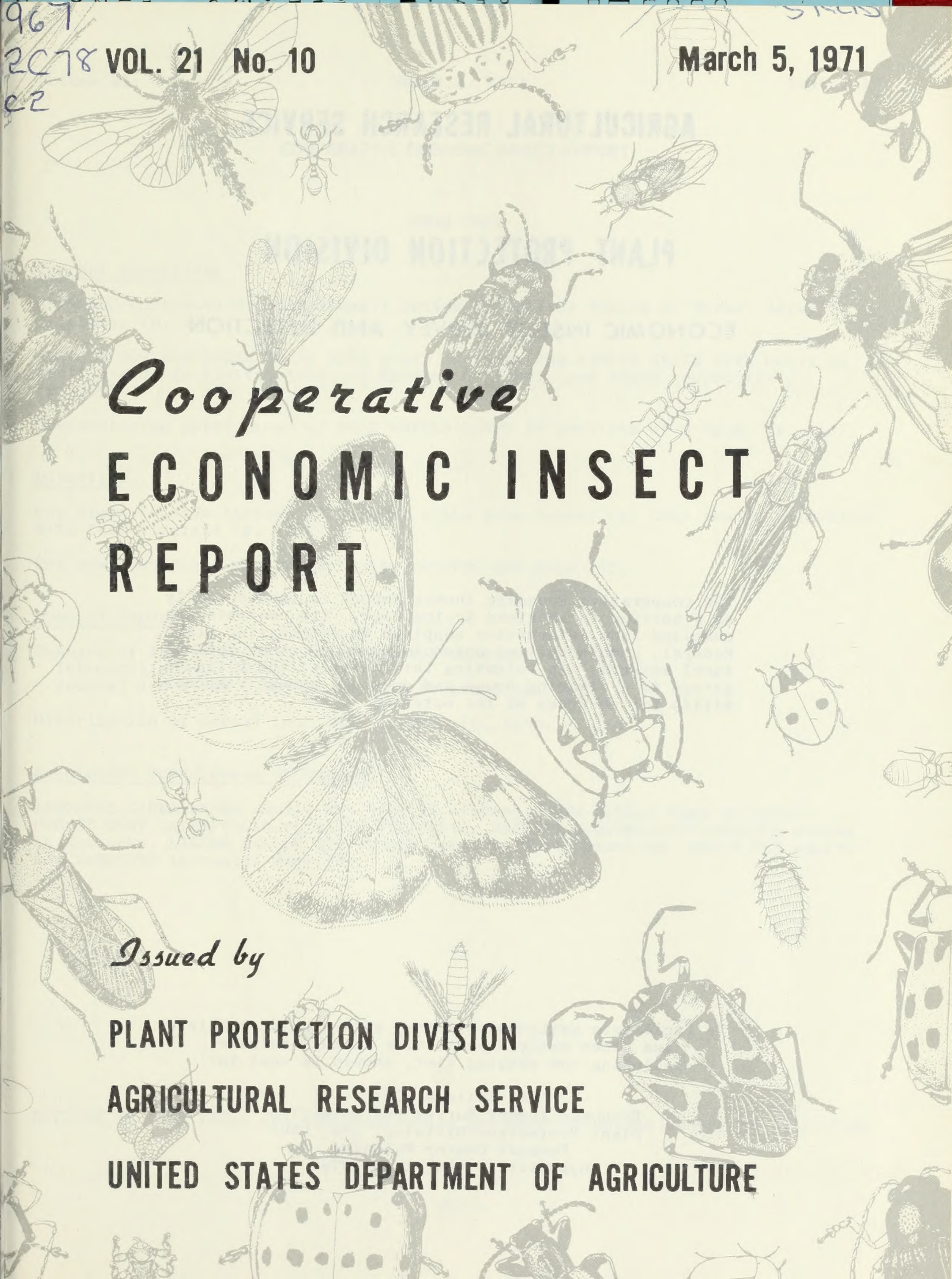

Cooperative ECONOMIC INSECT REPORT

Issued by

PLANT PROTECTION DIVISION
AGRICULTURAL RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PROTECTION DIVISION

ECONOMIC INSECT SURVEY AND DETECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Volume 21 March 5, 1971 Number 10

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

GREENBUG continues to damage small grains in Rolling Plains of Texas; heavy in Oklahoma. (p. 109).

HESSIAN FLY and BROWN WHEAT MITE heavy on wheat and WINTER GRAIN MITE heavy on small grains in limited areas of Kansas, Oklahoma, and Texas respectively. (p. 109).

Overwintering populations of PEAR PSYLLA heavy in portions of Oregon. (p. 110).

Detection

New State records include an ARMORED SCALE from Hawaii (p. 112) and an ERIOPHYID MITE from Virginia (p. 110).

For new county and independent city records see page 112.

Special Reports

Summary of Insect Conditions in the United States - 1970
  Introduction (p. 113).
  Federal and State Plant Protection Programs (p. 113).

Distribution of Cereal Leaf Beetle. Map. (p. 115).

Some First Occurrences of Season

IMPORTED CABBAGEWORM adults and eggs in Alabama. PEAR PSYLLA eggs in Oregon. FOREST TENT CATERPILLAR eggs in California. EASTERN SUBTERRANEAN TERMITE swarms in Kentucky. LARGER YELLOW ANT winged forms in North Carolina. HOUSE FLY adults and MOSQUITO larvae in Maryland.

Reports in this issue are for week ending February 26 unless otherwise indicated.

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WEATHER OF THE WEEK ENDING MARCH 1

HIGHLIGHTS: Cold weather came to the West. Mild temperatures continued over the East. Stormy weather prevailed early and late in the week with a brief tranquil spell at midweek.

PRECIPITATION: A massive storm centered over Missouri and Arkansas Monday moved to New England and the Atlantic Ocean by midweek. It dumped heavy snow along most of its path, with more than 2 feet at Gage, Oklahoma, 1 foot or more elsewhere in northwestern Oklahoma, much of Kansas, and eastern Nebraska, and several inches from Illinois to Michigan and eastward to Maine. The snowpack increased to 3 or 4 feet over parts of northern New England; 5 feet at Greenville, Maine. Deep snow drifts and blizzards halted highway travel. Ahead of storm, mixtures of snow and freezing rain iced highways and made highway travel risky. Farther ahead of the storm, violent thunderstorms and tornadoes occurred from the Ohio River Valley to the Carolinas and Georgia. Wednesday was a fairly decent day over most of the Nation. The big storm had moved out over the Atlantic Ocean. A few flurries continued in Maine and some thunderstorm activity was noted in southern Florida, but a touch of spring was short lived. By midmorning, a new front was producing rain in the Pacific Northwest. Scattered snow fell in the northern Rockies with gales at some localities. Livingston, Montana, measured gusts to 60 m.p.h. By Thursday, a new storm was moving into the northern Great Plains spreading cloudy skies and mixtures of rain and snow as it advanced. By evening, snow and blowing snow were common over the West and were spreading eastward and southward. Winds at Winslow, Arizona, gusted to 74 m.p.h. picking up sand and dust and reducing visibility to about 200 yards. Again, severe weather returned to the Southland. A tornado struck near Freer, Texas, Thursday evening. No reports of damage or injuries have been received. Over 3 inches of rain doused Galveston, Texas, early Friday morning. Thunderstorms were widespread throughout the South from eastern Texas to Georgia. The storm center moved northeastward crossing Lake Superior to Canada Saturday forenoon. Heavy snow fell from the northern Great Plains to New England. Winds gusting 50 to 70 m.p.h. piled snow in deep drifts halting traffic in some areas and making it hazardous and difficult in others. Winds and snow associated with the giant storm slackened Sunday, as a new storm in the West gained strength to set the stage for the proverbial lion to roar in on Monday.

TEMPERATURE: Cold air swept down across the Great Plains Monday. Temperatures dropped below zero in the Rocky Mountains from western Wyoming to northern New Mexico and in parts of the northern Great Plains and on Tuesday, from North Dakota to northern Nebraska, and to below freezing as far south as southern Texas, where San Antonio registered 29°. Record warmth occurred in the East. Hatteras, North Carolina recorded 76° Monday afternoon, the highest temperature

Weather of the week continued on page 112.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

CORN LEAF APHID (*Rhopalosiphum maidis*) - NEW MEXICO - Light on barley at Las Cruces, Dona Ana County. (N.M. Coop. Rpt.).

GREENBUG (*Schizaphis graminum*) - ARIZONA - Surveys negative in 6 fields of barley and wheat in Maricopa County. (Ariz. Coop. Sur.). NEW MEXICO - Ranged 0-2 per linear foot of alfalfa in Quay County. (Mathews). TEXAS - Damage continues widespread on wheat and other small grains in Rolling Plains. Greenbug observed in Wilbarger, Young, Baylor, Throckmorton, Motley, and Foard Counties. Damage heavy in Baylor County. Controls applied in some counties. Infestations generally light in panhandle area, snow and cold temperatures reduced activity. (Boring, Daniels). OKLAHOMA - Heavy on wheat in Tillman County. Some spraying underway as weather permits. (Okla. Coop. Sur.). ARKANSAS - Up to 20 per 50 sweeps of wheat in northwest area. (Warren). KANSAS - Counts usually zero but occasionally very light in wheat in west-central, south-central, and southeast crop districts. Counts zero in fields surveyed in Rush, Barton, Lane, and Ness Counties. (Martinez).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - ARIZONA - Counts per 100 sweeps of alfalfa: 134 at Parker, Yuma County; 200 on west side of Salt River Valley, Maricopa County. (Ariz. Coop. Sur.).

SMALL GRAINS

HESSIAN FLY (*Mayetiola destructor*) - KANSAS - Reported very heavy in some wheat planted before fly-free date in Kiowa County. (Gates, Brooks).

WINTER GRAIN MITE (*Penthaleus major*) - TEXAS - Damage heavy in Foard County. (Boring).

BROWN WHEAT MITE (*Petrobia latens*) - OKLAHOMA - Heavy on wheat in Tillman County. (Okla. Coop. Sur.).

TURF, PASTURES, RANGELAND

A SOFT SCALE (*Ceroplastes irregularis*) - CALIFORNIA - Counts of 5 per limb of *Atriplex* sp. along roadway at Cardiff-by-the-Sea, San Diego County. This is a new county record. (Cal. Coop. Rpt.).

FORAGE LEGUMES

ALFALFA WEEVIL (*Hypera postica*) - KENTUCKY - Eggs 274 per square foot of alfalfa in Fayette County. (Barnett). ARKANSAS - Survey in alfalfa negative in northwest area. (Warren). MISSISSIPPI - Larvae per 20 stems of alfalfa by county: Marshall 13, Pontotoc 29, and Oktibbeha 16. (Sartor).

EGYPTIAN ALFALFA WEEVIL (*Hypera brunneipennis*) - ARIZONA - Larvae averaged 20 per 100 sweeps of alfalfa on west side of Salt River Valley, Maricopa County. (Ariz. Coop. Sur.).

PEA APHID (*Acyrthosiphon pisum*) - ARIZONA - Ranged 1,000-3,500 per 100 sweeps of alfalfa in Parker Valley, Yuma County. (Ariz. Coop. Sur.). NEW MEXICO - Light on alfalfa in Quay and Dona Ana Counties. (N.M. Coop. Rpt.).

BEET ARMYWORM (*Spodoptera exigua*) - ARIZONA - Larvae ranged 30-150 per 100 sweeps of alfalfa at Parker Valley, Yuma County. (Ariz. Coop. Sur.).

A LYGUS BUG (*Lygus* sp.) - ARIZONA - Nymphs averaged 20 per 100 sweeps of alfalfa on west side of Salt River Valley, Maricopa County. (Ariz. Coop. Sur.).

WESTERN FLOWER THRIPS (*Frankliniella occidentalis*) - ARIZONA - Adults 200 and nymphs 1,000 per 100 sweeps in 2-year planting of alfalfa at Avondale, Maricopa County. (Ariz. Coop. Sur.).

COLE CROPS

IMPORTED CABBAGEWORM (Pieris rapae) - ALABAMA - Adult flight early and light in central areas; few eggs deposited on cabbage and collards in Lee County. (McQueen).

GENERAL VEGETABLES

GREEN PEACH APHID (Myzus persicae) - ARIZONA - Small colonies building up in some lettuce fields at Parker Valley, Yuma County. (Ariz. Coop. Sur.).

WESTERN FLOWER THRIPS (Frankliniella occidentalis) - CALIFORNIA - Counts of 5 per sweep in 40-acre onion planting at Imperial, Imperial County. (Cal. Coop. Rpt.).

DECIDUOUS FRUITS AND NUTS

PEAR PSYLLA (Psylla pyricola) - OREGON - Overwintering populations heavy in Hood River area, Hood River County. First eggs found February 11. Application of dormant spray began week ending February 19; hampered by rainy weather. (Zwick). Control underway in Medford area, Jackson County. First eggs noted February 20; prespray counts of 2-3 per tap, some as high as 8 per tap. Post treatment checks revealed good control with counts of 1 psyllid per 10 taps. (Berry).

FOREST TENT CATERPILLAR (Malacosoma disstria) - CALIFORNIA - Egg masses noted on peach twigs in St. Helena area, Napa County. (Cal. Coop. Rpt.).

SAN JOSE SCALE (Quadraspidiotus perniciosus) - CALIFORNIA - Counts of 4 per twig on scattered almond trees at Orland, Glenn County. (Cal. Coop. Rpt.).

ORNAMENTALS

BAGWORM (Thyridopteryx ephemeraeformis) - KENTUCKY - Bags averaged 12 per sugar maple tree in Madison County nursery. (Barnett).

BEET ARMYWORM (Spodoptera exigua) - CALIFORNIA - Larvae damaged primrose nursery stock at Colma, San Manteo County. Scattered plants severely defoliated. (Cal. Coop. Rpt.).

TWOSPOTTED SPIDER MITE (Tetranychus urticae) - FLORIDA - All stages severe on 447 rose plants at Winter Park, Orange County. (Graddy).

GREENHOUSE WHITEFLY (Trialeurodes vaporariorum) - KENTUCKY - Remains problem in greenhouses in central areas. (Barnett).

FOREST AND SHADE TREES

A CONIFER SAWFLY (Neodiprion taedae linearis) - MISSISSIPPI - Survey showed eggs moderate to heavy on loblolly pine in Lowndes County. (Sartor).

AN ERIOPHYID MITE (Aceria theospyri) - VIRGINIA - Specimen collected on persimmon in King and Queen County by J.A. Weidhaas, September 2, 1970. Determined by H.H. Keifer. This is a new State record. (Allen).

AN ARMORED SCALE (Lopholeucaspis japonica) - VIRGINIA - Specimen collected on European white birch in Independent City of Richmond by D. Innes and R. Jennings. Determined by M. Kostarab. This is a new record. (Weidhaas, Feb. 19).

MAN AND ANIMALS

SCREWWORM (Cochliomyia hominivorax) - No cases reported in U.S. February 20-27. Total of 63 laboratory-confirmed cases reported in portion of Barrier Zone in Republic of Mexico as follows: Sonora 30, Chihuahua 2, Nuevo Leon 6, Tamaulipas 25. Total of 15 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screwworm flies released: Texas 4,708,000; Mexico 118,118,000. (Anim. Health Div.).

COMMON CATTLE GRUB (Hypoderma lineatum) - OKLAHOMA - Light on cattle in Mayes, Hughes, and Choctaw Counties. Indicates numbers in backs of cattle decreasing in most of these areas. (Okla. Coop. Sur.). MISSOURI - Counts per animal in St. Charles County ranged as follows: 1-31 in 17 of 51 cows; 1-3 in 7 of 38 heifers; 1-9 in 10 of 72 bulls on feed. (Ronald, Wingo). KENTUCKY - Unspecified species ranged 0-43 (averaged 4.1) per animal on backs of Holstein cattle of various ages in central areas. (Barnett).

A MOSQUITO (Aedes canadensis) - MARYLAND - Eggs hatching in Prince Georges, Montgomery, and Howard Counties. (U. Md., Ent. Dept.).

HOUSE FLY (Musca domestica) - MARYLAND - Emergence noted at several locations in Prince Georges County due to warm weather. (U. Md., Ent. Dept.).

LICE - MISSOURI - Haematopinus eurysternus (shortnosed cattle louse) heavy on 3 of 51 cows checked in St. Charles County and Linognathus vituli (longnosed cattle louse) heavy on 7 of 38 calves. (Ronald, Wingo). OKLAHOMA - Mainly H. eurysternus averaged 1 per hair part on beef cows in Payne County. Moderate in Mayes, Hughes, and Kingfisher Counties. Light in Choctaw County. H. suis (hog louse) heavy on hogs in Kingfisher County. (Okla. Coop. Sur.).

A HARDBACKED TICK (Ixodes pacificus) - CALIFORNIA - Found on humans who have entered brush, grasslands, and canyon areas at Newport Beach, Orange County. Weather and moisture conditions indicate ticks may be problem this spring. (Cal. Coop. Rpt.).

CATTLE TICKS (Boophilus spp.) - TEXAS - During February recovered 34 B. microplus (southern cattle tick) in Cameron County and 1 in Hidalgo County. B. annulatus (cattle tick) counts by county as follows: Webb 15, Val Verde 3, Maverick 23, and Kinney 1; these collections from quarantine zone. (Anim. Health Div.).

HOUSEHOLDS AND STRUCTURES

COCKROACHES - TENNESSEE - Blattella germanica (German cockroach) light in home in Davidson County. Controls applied. (Gordon). OKLAHOMA - Blatta orientalis (oriental cockroach) appears more common in and around homes in many areas of State than for past several years. (Okla. Coop. Sur.).

LARGER YELLOW ANT (Acanthomyops interjectus) - NORTH CAROLINA - Winged adults observed in building near Lexington, Davidson County, February 18. (Hunt).

EASTERN SUBTERRANEAN TERMITE (Reticulitermis flavipes) - KENTUCKY - One colony swarmed February 23. (Barnett).

BENEFICIAL INSECTS

A LADY BEETLE (Coleomegilla maculata) - INDIANA - Parasites reared from this species determined Perilitus coccinellae (a braconid) by P.M. Marsh. Adults of C. maculata collected from oats, alfalfa, and particularly corn, mostly from central district during period June 29 to July 29, 1970. (Meyer).

A FLOWER BUG (Orius sp.) - ARIZONA - Adults averaged 20 per 100 sweeps of alfalfa on west side of Salt River Valley, Maricopa County. (Ariz. Coop. Sur.).

HAWAII INSECT REPORT

New State Record - Specimens of an ARMORED SCALE (Lepidosaphes pini) collected from needles of Pinus sp. by H. Koyama at Honolulu, Oahu, February 3, 1971. Determined by J.W. Beardsley. This scale described from Japan where several conifers are attacked, including Pinus spp. (Beardsley).

General Vegetables - ONION THRIPS (Thrips tabaci) adults moderate in 500 square feet of green onions at Waikapu, Maui, and in 0.1 acre of green onion at Koko Head, Oahu. Damage moderate to heavy at both areas. Larvae and pupae of LEEK MOTH (Acrolepia assectella) moderate in green onions at Waikapu; 75 percent of leaves affected. (Ah Sam, Kawamura). Larvae of BEET ARMYWORM (Spodoptera exigua) generally light (averaged 10 percent of leaves infested) in green onions at Waimanalo, Oahu. Larvae trace (average 1 per 10 plants) in 0.1 acre. All stages of GREENHOUSE WHITEFLY (Trialeurodes vaporariorum) light in 0.5 acre of cucumber and 0.75 acre of eggplant at Halawa, Oahu. All stages of BEAN FLY (Melanagromyza phaseoli) trace to light in 0.1 acre of soybeans and 0.25 acre of snap beans at Waimanalo. Adults and oviposition scars moderate in 500 square feet of snap bean seedlings at Waikapu, Maui; adults of a braconid (Opius sp.) moderate on seedlings. (Miyahira, Funasaki).

Ornamentals - An ADELGID (Pineus pini) light on several Pinus spp. bonsai plants at Liliha, Oahu. This is third reported site on Oahu and about 9 miles from previous 2 sites at Kailua and Hawaii Kai. (Kawamura).

Forest and Shade Trees - Larvae of a NOCTUID MOTH (Melipotis indomita) moderate under loose bark of kiawe trees at Maalea, Maui. Surveys of monkeypod trees (Samanea saman) negative at Punchbowl, Kapiolani Park and Boulevard, Waimanalo, and Koko Head, Oahu. Also, larvae of MONKEYPOD MOTH (Polydesma umbricola) light in most host situations. Adults of M. indomita in light trap collections indicate decline at Ewa, Kunia, and Halawa, Oahu, during past few months. Counts by month: November 121, December 57, and January 17. (Ah Sam, Kawamura). BARNACLE SCALE (Ceroplastes cirripediformis) heavy on branches of fiddlewood (Citharexylum spinosum) at Hawaii Kai, Oahu. Scales parasitized by encyrtid wasps - 5 percent Coccidoxenus mexicanus and 95 percent probably Aphycus eruptor. Collections from same host situation in early November 1970 yielded C. mexicanus 11 percent, M. eruptor 85 percent, and a PTEROMALID WASP (Scutellista cyanea) 4 percent. (Rose, Kawamura).

DETECTION

New State Records - AN ARMORED SCALE (Lepidosaphes pini) HAWAII - Oahu Island (p. 112). AN ERIOPHYID MITE (Aceria theospyri) VIRGINIA - King and Queen County (p. 110).

New County and Independent City Records - AN ARMORED SCALE (Lopholeucaspis japonica) VIRGINIA - Richmond (p. 110). A SOFT SCALE (Ceroplastes irregularis) CALIFORNIA - San Diego (p. 109).

Weather of the week continued from page 108.
of record for the month of February. By Wednesday, a high was centered over the Southeast and southerly breezes on the west side of the high brought springlike weather to mid-America. On Thursday, afternoon maximums over the Midwest ranged from the 40's in the Dakotas to the 80's in the lower Rio Grande Valley. Sidney and Burwell, Nebraska, registered 58° and Laredo, Texas, recorded 87°. Balmy weather continued in the East with maximums Thursday afternoon ranging from the 60's in Kentucky and Virginia to the 70's in the Gulf States and 80's in much of the Florida Peninsula, reaching 88° at Tampa and Orlando. Tampa had never before registered 88° in any February. Meanwhile, bitter cold hit the Northeast. Greenville and Houlton, Maine, registered -12° Thursday morning. Another cold blast hit the Far West over the weekend. Bryce Canyon, Utah, registered -21° Saturday and Phoenix, Arizona, recorded 31° Sunday morning. In general, temperatures averaged below normal over the West and above normal over the East. (Summary supplied by Environmental Data Service, ESSA).

SUMMARY OF INSECT CONDITIONS IN THE UNITED STATES - 1970

INTRODUCTION

The summary of insect conditions, beginning in this issue, will be continued in several succeeding issues of the Cooperative Economic Insect Report. This summary was compiled by the Economic Insect Survey and Detection Staff from annual summaries submitted by various State and Federal cooperators. A list of the individuals who assisted in assembling data, as well as a summary of the weather for 1970, will appear after the last section of this summary is published. The Economic Insect Survey and Detection Staff appreciates the assistance of all individuals who have participated in the preparation of material for the 1970 summary.

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

BOLL WEEVIL (*Anthonomus grandis*) traps (2,800) were operated in all High Plains counties of TEXAS from early May through July 24. About one-third of these traps were baited with grandalure. Survey in the control zone was started July 6. Specific fields in this area were found infested some 5 weeks earlier than in 1969.

Early boll weevil infestations were found in the East Plains of Texas and in Lubbock and Lynn Counties, all on the Caprock. These early finds indicated a pattern of infestation similar to 1969. One infested field was found in Gaines County on July 30. In Andrews County, 1,876 acres were treated in early planted cotton after overwintering weevils had been found on pheromone traps. Several scattered infestations were noted along the edge of the Caprock from Lubbock to Ackerly, and infestations were found for the first time in Martin and Dawson Counties. Infestations were found to be more numerous between Lubbock and Crosbyton, and on the East Plains area extending northward to Silverton in Briscoe County. With the exception of a few fields on the East Plains in Dickens County, populations were very light.

Limited surveys below the Caprock indicated general infestations in Kent and Dickens Counties. As in 1969, no boll weevils were found in the El Paso area of Texas in 1970. The Big Bend diapause boll weevil control program was once more undertaken. The first application included 11,000 acres on both sides of the Rio Grande, and the second included 1,016 on both sides of the river.

Boll weevil detection traps were placed in operation April 1 in the desert areas of CALIFORNIA. The 14 traps were serviced with sterile male boll weevils at weekly intervals through June 30. No boll weevils were collected. In NEW MEXICO, synthetic lure was tried in lieu of sterile boll weevils, only to be replaced with sterile weevils in May. In this State, 195 traps were operated from early May through July 10. From July 10 through August, 150 traps were operated using pheromone wicks for bait. Field surveys in all cotton-growing areas of Lea and Dona Ana Counties failed to reveal boll weevils. New Mexico remains free of this pest.

The BROWNTAIL MOTH (*Nygmia phaeorrhoea*) survey began in January in MASSACHUSETTS, RHODE ISLAND, NEW HAMPSHIRE, and MAINE. In Maine, a medium sized infestation was found on Cousins Island in Casco Bay. On mainland areas bordering the bay, infestations were light and scattered. By June, heavy infestations of browntail moth were defoliating two islands (50 acres) in the Casco Bay area of Maine. Maine Forest Service inspectors again clipped webs for control. In Massachusetts, the generally infested area of Race Point Light at Provincetown on Cape Cod again supported a heavy infestation. No browntail moth infestation was found in New Hampshire.

CARIBBEAN FRUIT FLY (Anastrepha suspensa) trap count totals were generally the lowest in the last 3 or 4 years in FLORIDA. No new county records were established in 1970.

CEREAL LEAF BEETLE (Oulema melanopus) continued to spread during 1970. New records were established for Augusta, Bath, and Frederick Counties, VIRGINIA. Spread continued in KENTUCKY, where Adair, Barren, Breckenridge, Clinton, Edmonson, Grayson, Laurel, Perry, Pulaski, Russell, and Wayne Counties were found infested for the first time. Spread to the west included Christian, Clark, Coles, Cumberland, De Witt, Douglas, Du Page, Effingham, Fayette, Ford, Jasper, Kendall, Macon, Menard, Montgomery, and Sangamon Counties, ILLINOIS. Surveys were conducted in oat and wheat areas of other States adjacent to known infested States; no new States were found infested.

Cereal leaf beetle adults reached 150 per 100 sweeps and larvae 1-2 per stem during the first week of June in several oatfields at Enon Valley in Beaver County, PENNSYLVANIA. This county as well as Butler, Lawrence, and Mercer Counties were sites of the first infestations of this cereal pest in the State in 1967. In WEST VIRGINIA, adult counts of 1 per 100 sweeps in small grain were found April 12 in Wood County. The 1970 summer survey indicated populations were increasing in the counties along the Ohio River. Economic damage was noted in Mason, Jackson, and Wood Counties this year. Elsewhere, no changes in population levels were noted. Only 12 counties remain uninfested in West Virginia.

Cereal leaf beetle is an increasing problem in OHIO, being particularly abundant in the east-central counties. Mainly a pest of oats in the State, damage to wheat by this leaf beetle was reported so serious in several east-central counties that chemical treatment was made. Adults first appeared in mid-April on wheat in central Ohio. Counts increased from 3 to 350 per 100 sweeps. Eggs were first laid in April and May and larval feeding peaked near the end of May with 1,300 larvae per 100 sweeps. Pupation was about complete by mid-June. Some new adults appeared in late June and populations were noticeable in corn adjacent to wheat. The annual larval damage survey indicated an overall population buildup in east-central and northwestern counties, with numbers being much lower in the extreme northeast counties of Ohio.

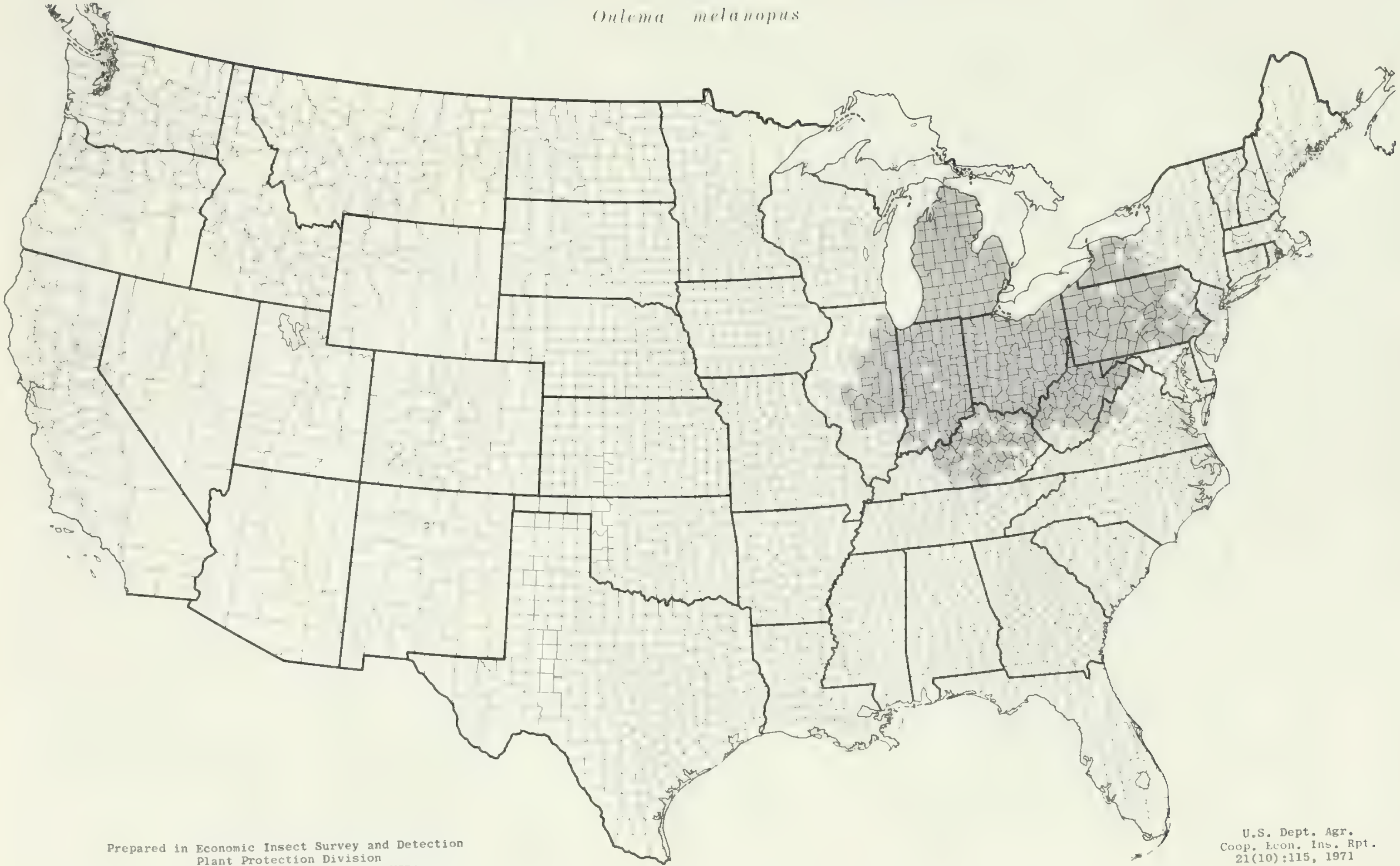
Cereal leaf beetle populations have remained about static in northwest INDIANA. However, larval populations increased about ten-fold in the west-central district, two-fold in the central district, and more than three-fold in southeastern counties of the State. In MICHIGAN, cereal leaf beetle populations were sufficiently heavy to justify spraying for control as far north as Presque Isle County in 1970. Spraying was intensive in the southern part of the State. Controls were generally satisfactory in oats. Some wheat, especially in areas where oats were scarce, were left unsprayed. These fields, where the beetle remained in the wheat, were heavily damaged.

Although CITRUS BLACKFLY (Aleurocanthus woglumi) was found infesting trees in Reynosa, Tamaulipas, and at Matamoras, Nuevo Leon, Mexico, no citrus blackfly was found in the United States. These infestations in Mexico were treated as found. Infestations were found in 10,245 trees in the chemical control zone in Mexico. More than 230,000 trees were examined in TEXAS and Mexico.

EUROPEAN CHAFER (Amphimallon majalis) larvae caused severe turf damage in the communities of Athens and Sayre in Bradford County, PENNSYLVANIA, in April. Larval counts at Allentown revealed populations ranging from 7 to 43 per square foot. The only known extension of infestation occurred in Lehigh County. Over 1,800 traps (blacklight and chemical) were deployed in 14 States. More than 4,300 acres were found infested outside the regulated area during this survey. Initial finds were made at Wilmington and Reading, Middlesex County, MASSACHUSETTS, and some extension of the generally infested areas was noted in CONNECTICUT. In NEW YORK, one township in Ulster County and one in Steuben County were found infested for the first time. Grubs were more serious in central New York than at any time since the late 1940's.

Distribution of Cereal Leaf Beetle

Oulema melanopus



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Flights of EUROPEAN CRANE FLY (Tipula paludosa) were heavy at several locations in northern Whatcom County, WASHINGTON, including Blaine, Birch Bay, Sumas, and Lynden. This was the first known occurrence of European crane fly at Lynden.

Surveys for GIANT AFRICAN SNAIL (Achatina fulica) were continued in FLORIDA, but no new counties were found infested. The State has applied bait on the infested properties and has confined the snail to its original areas of infestation.

No additional infestations of GOLDEN NEMATODE (Heterodera rostochiensis) were found outside Long Island, NEW YORK. Survey of treated farms in Steuben County continued negative for viable cysts. Over 42,000 soil samples were collected in the potato-growing areas of the United States of which 34,000 were from New York. Fumigation of Long Island farms is continuing. Infestation is apparently limited to 5 previously treated potato fields on Long Island totaling 155 acres and to the 55-acre research farm in Steuben County.

GRASS BUGS damaged crested wheatgrass on the Hualapai Indian Reservation in ARIZONA. Nymphs infested 30,000 acres. A total of 28,512 acres was treated during May. In UTAH, Labops hesperius and Irbisia pacifica discolored crested wheatgrass in Iron and Washington Counties. About 450 L. hesperius per square foot were noted in Brimball Canyon, Uinta National Forest, Utah County. Counts averaged 500 per square foot on crested wheatgrass at Blubber Creek, Garfield County. Sprays were applied to 160 acres of crested wheatgrass in Garfield County and 1,400 acres in Kane County. Grass bugs, mostly L. hesperius, caused severe damage to about 35,000 acres in Kane County and 25,000 acres in Garfield County. The severity of damage in these counties exceeded that of 1966. Millard County had some damage to crested wheatgrass, while L. hesperius damaged grasses over large areas of Cedar Mountain in Iron County. In IDAHO, Labops spp. damaged 35 percent of crested wheatgrass in an 80-acre field in Gem County and caused much injury to a barley field at Caldwell, Canyon County. Slight damage occurred at Fairfield, Camas County. Border chemical treatment prevented damage to bluegrass seed fields in Valley County. Labops sp. infested 4,000 acres at Long Tom, Elmore County. In OREGON, L. hesperius was heavy in improved pastures at lower elevations of Baker County. The National Forest reseeded area of Baker County was saved from injury by this pest. Injury occurred to 2,000 acres of drier rangeland in the county. In WASHINGTON, Irbisia pacifica retarded growth of timothy at Cle Elum, Kittitas County.

In WYOMING, L. hesperius was light to moderate on 400 acres of crested wheatgrass at Chugwater, Platte County; however, no movement into adjoining wheat occurred. L. hesperius infested 500 acres of crested wheatgrass near Cheyenne, Laramie County, and Irbisia sp. infested 40 acres of intermediate wheatgrass in Crook County. L. hesperius damaged wheatgrass and edges of wheat strips (adjacent to crested wheatgrass) in Goshen and Laramie Counties. Results of controls were good. Irbisia sp. and Labops sp. damage was light on intermediate wheatgrass near Newcastle, Weston County. In NEBRASKA, L. hesperius was common on crested wheatgrass throughout the panhandle area, where counts ranged 6-3,000 per 100 sweeps in early June. Native grasses were unaffected. Severe damage occurred in Sioux and Dawes Counties. In SOUTH DAKOTA, Labops sp. was collected in 15 counties; however, no appreciable damage was noted. Most collections were made near roadsides.

GRASSHOPPERS caused severe damage in WASHINGTON in 1970, particularly in the same areas damaged in 1969. Several areas with moderate numbers during 1969 showed extremely high levels in 1970. Several thousand acres in Okanogan and Klickitat Counties required treatment, and 306,000 acres in 11 eastern counties had counts of 8 or more grasshoppers per square yard. These pests were abundant in pastures and rangelands throughout most of central and eastern Washington during late spring, summer, and fall. Economic levels of various species were found in Asotin, Chelan, Columbia, Douglas, Ferry, Garfield, Kittitas, Klickitat, Lincoln, Okanogan, Spokane, Stevens, Walla Walla, Whitman, and Yakima Counties. Grasshoppers were not serious in most parts of OREGON during 1970. Infestations, comprising 34,000 acres were scattered over five counties. Populations in CALIFORNIA apparently peaked and subsided during June. Controls to protect croplands were applied by private firms on small tracts in Los Angeles, Riverside, San Diego, and Ventura Counties. On the Hoopa Indian Reservation, 2,500 acres were treated. Small acreages were treated in Plumas County and on the Tulelake Fish and Wildlife Refuge. Fall surveys revealed 336,400 acres infested in California.

Grasshopper populations were generally below economic levels in NEVADA except in areas of Eureka, Lander, and Washoe Counties. Melanoplus rugglesi was found in a small area in Rocky Canyon in the Seven Troughs area of Pershing County. This species was observed in the same area last year for the first time in 15 years. Adults of this species and Oedaleonotus enigma were observed mating during the last week of June. Surveys in ARIZONA indicated grasshopper infestations on Forest Service and Indian Service lands in Coconino, Yavapai, Gila, and Graham Counties. Two blocks of rangeland totaling 58,752 acres were treated on the San Carlos Indian Reservation. A late developing infestation of Boopedon nubilum, Morseiella flaviventris, and Melanoplus lakinus threatened about 45,000 acres of rangeland in the Sasabe area of Pima County. Populations ranged up to 30 per square yard. Late summer rains throughout northern Arizona resulted in excellent range conditions. In NEW MEXICO, the fall adult survey revealed only 95,000 acres economically infested, a decrease from the 923,000 acres infested in 1969. Slightly over 64,000 acres were found infested in UTAH, a drastic reduction from the 378,000 acres infested the previous year. Melanoplus sanguinipes, Camnula pellucida, M. bivittatus, Aulocara elliotti, Oedaleonotus enigma, M. packardii, and M. femurrubrum were the most important species on rangelands during 1970. Economic populations (8 or more per square yard) occurred on 64,000 acres, the lowest infested acreage in Utah for 34 years. Grasshoppers damaged at least 12,570 acres of cropland in Utah this season.

Grasshoppers were economic on an estimated 1,709,000 acres in IDAHO. Much interest was shown in certain western counties for possible need for controls in 1971. Over 25,000 acres were treated in 1970 in Clearwater, Latah, and Nez Perce Counties. With 117,000 acres economically infested, MONTANA, has the lowest acreage infested in the State in recent years. This acreage is scattered over eight counties. Predominant species were M. sanguinipes, M. bivittatus, M. femurrubrum, Ageneotettix deorum, and C. pellucida. In WYOMING, a total of 204,111 acres of rangeland was sprayed for the control of several species of grasshoppers in Converse, Goshen, and Platte Counties. Fall adult surveys indicated that 130,200 acres of rangeland were economically infested, with the largest infested acreages in Converse, Hot Springs, and Johnson Counties. The adult survey in COLORADO revealed grasshopper infestations on 310,000 acres. Interest is centered around a 25,000-acre infestation in Las Animals County which will bear watching in 1971.

The grasshopper situation in TEXAS remained comparable with that of 1969, with 1,888,000 acres infested. In OKLAHOMA, approximately 2,300,000 acres of rangeland were infested in 33 counties, with some locations having as many as 40 grasshoppers per square yard. This constitutes a 300-percent increase over the 1969 infested acreage. Grasshoppers caused heavy crop damage to border rows in scattered fields in some areas of KANSAS in 1970. Damage was first found in Harvey County in early June. From mid to late June, severe damage to corn and sorghum was reported in Cloud, Smith, Jewell, Republic, and Osborne Counties, with populations reaching 50 per square yard in Cloud County. Much treating was reported in these counties. Serious foliar damage was found in a field of late corn in Crawford County in mid-August and light damage along the borders of a sorghum field in the same county in early September. Some damage to border rows of sorghum was found in Morton County in late August. Estimates from county agricultural agents show that about 9,800 acres of corn were treated for grasshoppers in 1970 of which about 6,000 acres were located in counties in the southwest district and 3,500 acres in counties in the north-central district. Grasshopper populations on rangeland in Kansas were variable. Nymphal surveys in 20 counties during May showed economic infestations only in Lincoln County, with Melanoplus bivittatus and M. sanguinipes involved. In June, surveys revealed populations often exceeding 50 per square yard. M. bivittatus, *M. femurrubrum*, and *M. sanguinipes* were the dominant species. Adult surveys showed noneconomic populations except in the northern tier of counties from Norton County to Marshall County, and in an area centering around Kiowa County. In NEBRASKA, nymphal surveys showed heavy populations in many areas of the State. The dominant species in the eastern portion of the State were *M. femurrubrum*, *M. bivittatus*, *M. sanguinipes*, and *M. differentialis*. Rangeland populations, including *Aulocara elliotti*, *Ageneotettix deorum*, and *Trachyrhachys kiowa*, were low. Approximately 5,000 acres were treated in the Clay Center area of Clay County. The fall adult survey showed that economic infestations exist over most of eastern Nebraska.

Grasshoppers caused crop damage in parts of 10 southeastern counties of SOUTH DAKOTA. *Melanoplus bivittatus* and *M. differentialis* numbered up to 20 per square yard in alfalfa, and up to 30 per square yard in weedy margins and roadsides. There was no rangeland problem, however. In NORTH DAKOTA, unfavorable spring weather delayed grasshopper egg hatch until the latter part of May. Mortality occurred during the hatching period. Damage was evident in alfalfa by mid-June with populations of 40 first and second instars per square yard. Above normal temperatures during June and July accelerated development and adults were present by mid-July. Controls were started at this time and were necessary late in the season to protect soybeans. The adult survey showed increases in infestations which were confined to alfalfa fields and wildlife habitat plantings. Infestations occurred in parts of Grant, Morton, Emmons, Pierce, McHenry, Benson, Cass, Richland, and Ransom Counties. Dominant species were *Melanoplus bivittatus*, *M. packardii*, *M. differentialis*, *M. sanguinipes*, and *M. femurrubrum*. With early maturation and a long favorable egg laying period, infestations in North Dakota are expected to increase during 1971. Areas of economic infestations exist in west-central, central, and east-central MINNESOTA. Heaviest populations (12-80 per square yard) were noted in Sherburne, Stearns, Todd, and Houston Counties, where damage occurred to alfalfa, soybeans, and marginal rows in corn. *M. femurrubrum* was the dominant species.

GYPSY MOTH (*Porthetria dispar*) defoliated about 973,000 acres in 1970. NEW YORK led with 416,000 acres, a 400-percent increase. CONNECTICUT had the largest increase (600 percent) on 368,000 acres. NEW JERSEY, with 129,000 acres, ranked third. Defoliation occurred to a lesser degree in MAINE, NEW HAMPSHIRE, MASSACHUSETTS, RHODE ISLAND, and PENNSYLVANIA. No new States were found infested in 1970; however, new county records included Kent, DELAWARE; Baltimore, Kent, Harford, Queen Annes, Worcester, and Wicomico, MARYLAND; Bradford, Columbia, Dauphin, Delaware, Northumberland, Montour, Lycoming, Somerset, and Sullivan, PENNSYLVANIA; Accomack, Rockingham, and Prince William, VIRGINIA; and St. Lawrence, NEW YORK. Hazardous infestations around mobile home parks increased problems of regulatory agencies. Parasites released in the generally infested area of Delaware totaled 110,000, Maryland 210,000, New Jersey 6,523,000, New York 10,000, Pennsylvania 80,000, and Virginia 270,000. The parasites released were *Brachymeria intermedia* (a chalcid); 2 braconids, *Apanteles porthetriae* and *Rogas* sp.; 2 tachina flies, *Exorista rossica* and *E. segregata*; and *Ooencyrtus kuwanai* (an encyrtid wasp).

IMPORTED FIRE ANT (*Solenopsis saevissima richteri*) was detected for the first time in Bradley and Faulkner Counties, ARKANSAS; Collier County, FLORIDA; Clinch and Columbia Counties, GEORGIA; Prentiss and Bolivar Counties, MISSISSIPPI; Jones County, NORTH CAROLINA; Darlington County, SOUTH CAROLINA; and in Atascosa, Brazos, De Witt, McLennan, Medina, and Jackson Counties, TEXAS. Extensions of existing infestations were found in 11 counties in Georgia, 11 counties in North Carolina, 2 in South Carolina, 14 in OKLAHOMA, 2 in Florida, 9 in Mississippi, 3 in LOUISIANA, and 2 in Texas. In Louisiana, private growers conducted control on their own where no control was planned on the State-Federal-landowner control program. Treatment was applied to over 14 million acres in Alabama, Louisiana, Mississippi, Arkansas, Georgia, North Carolina, Texas, and South Carolina. All survey in TENNESSEE was negative in 1970.

JAPANESE BEETLE (Popillia japonica) continued a problem in MICHIGAN in 1970. Adults were found in 230 of 13,000 traps placed throughout the State. Soil treatment was made on 3,100 acres at scattered locations in eleven counties. All trap checks in MINNESOTA, IOWA, and NEBRASKA were negative. A single adult was trapped at General Mitchell Field, Milwaukee, WISCONSIN. One male Japanese beetle was collected in a residential area of South Beloit, Winnebago County, ILLINOIS, 0.25 mile from the Wisconsin line. This was a new county record. Extension of infested areas in Illinois and INDIANA were found this year, as well as Dearborn, Ohio, and Washington Counties for new county records in Indiana. A total of 34 Japanese beetles was collected in the St. Louis area of MISSOURI. These finds were in two isolated areas where beetles were found in 1969. In KENTUCKY, Bracken, McCreary, and Montgomery Counties were found infested for the first time. Extensions of infestations were found in several counties.

One Japanese beetle was collected in a trap at Bangor, MAINE, outside the regulated area. Japanese beetle was very numerous locally in NEW HAMPSHIRE. Up to 20 grubs per square foot were found in one golf course. In MASSACHUSETTS, beetles were controlled at Westover Air Force Base near Chicopee and at Barnes Airport at Westfield. In CONNECTICUT, a population increase was evident but localized. Adult activity in NEW JERSEY all but ceased by mid-August. Japanese beetle populations were heavy enough in many areas of PENNSYLVANIA to cause serious injury to susceptible hosts. Roses in most sections needed constant protection during July and August.

Japanese beetle necessitated the treatment of aircraft at Dover Air Force Base in DELAWARE during the period June 24 through August 19. Populations increased but were localized and not generally heavy. Adults were active throughout MARYLAND on cornstalks and foliage. Damage was heaviest in Dorchester County where feeding damage ranged 5-50 percent of the stand in many fields. Japanese beetle caused heavy browning of fruit and shade trees and heavy damage to corn silks at spotted locations in Rockingham County, VIRGINIA. The Shenandoah Valley Airport serving Staunton and Harrisonburg required treatment on two occasions. Japanese beetle was the most serious lawn insect in WEST VIRGINIA. Grubs ranged 15-22 per square foot during April. First adults were collected in Kanawha County on June 7, and in Cabell, Wayne, Putnam, Roane, Mason, Jackson, Harrison, and Braxton Counties on June 18. Damage to many ornamental shrubs was heavy. Unsprayed nursery stock was heavily damaged even in nurseries where soil insecticides had been applied. In OHIO, adults were among the major forest and shade trees pests and much more abundant than in 1969. Conditions were serious enough in some nurseries that treatment for adults was considered. Grubs were turf pests in mid-June in many golf courses as were adults emerging from lawns in early July. Wild grape, oats, roses, soybeans, corn, birch, plum, cherry, linden, oak, alfalfa, and red clover were damaged in Ohio.

Japanese beetle was very serious on apple foliage in upper Piedmont counties of SOUTH CAROLINA. The apple spray schedule appears mainly effective except during peak emergence around July 4 when an extra application is needed. This scarab was very destructive to unsprayed grape leaves in all of the infested upper Piedmont counties.

Traps were installed at likely points of introduction in ALABAMA, GEORGIA, MISSISSIPPI, NORTH CAROLINA, SOUTH CAROLINA, OKLAHOMA, TENNESSEE, and TEXAS. Beetles were trapped in Hart, Newton, Richmond, Henry, and Douglas Counties, Georgia, for the first time. Extensions of the infested area were found at Irondale, Jefferson County, Alabama; in the Augusta area of Georgia; and in several counties of eastern Tennessee. Japanese beetles were trapped for the first time in Cleburne, Dallas, Montgomery, and Winston Counties, Alabama; Douglas, Hart, Henry, and Newton Counties, Georgia; Calhoun and Chester Counties, South Carolina; Lincoln and Montgomery Counties, North Carolina; Lauderdale County, Mississippi; and Smith County, Tennessee.

MEXICAN BEAN BEETLE (*Epilachna varivestis*) adults were first active June 16 in IDAHO. This was 13 days later than in 1969 and was probably due to average daily temperatures being 3° to 5° lower than normal during April and most of May. Efforts were made during 1970 to eradicate the localized infestations at Rupert, Minidoka County, and at Boise, Ada County. Chemical treatments made at Rupert in 1969 appear to have been effective as this pest only infested three gardens in 1970 compared with 22 gardens in 1969. At Boise, 800 gardens required treatment this season compared with 250 in 1969, although adults were not so numerous.

The MEXICAN FRUIT FLY (*Anastrepha ludens*) survey in TEXAS was conducted during March and one week in April in the regulated area, and March through May in the nonregulated area. One female fly was collected in Hidalgo County on March 24. This was the lowest recovery for March since the 1957-1958 season. On April 3, a female fly was taken, and on April 7, one larva was found, both in Hidalgo County. No larvae were found nor adults trapped outside the regulated area. Survey in LOUISIANA was negative. Traps were operated in Orleans, St. Bernard, and Plaquemines Parishes. Survey in ARIZONA was negative. In CALIFORNIA, one male *Anastrepha ludens* was trapped on March 3 in San Diego. Survey in California remained negative until July 7 when 1 male was trapped. Additional flies were trapped on July 8, 23, 28, and 29. In Tijuana, Baja California, Mexico, one native male was trapped March 3, and a native female trapped at Ensenada on March 23. Release of sterile flies in western Mexico began April 9. The total catch of native flies for the season was 13 at Tijuana and 2 at Ensenada, Baja California. Over 22 million sterile flies were released in western Mexico.

MORMON CRICKET (*Anabrus simplex*) infestations in NEVADA were light and scattered. The expected buildups did not occur. In UTAH, only solitary Mormon crickets were found. No banding was noted in OREGON, where 700 to 1,000 acres in Wallowa County had populations of 1-6 crickets per square yard on private and Forest Service lands.

Although a single male ORIENTAL FRUIT FLY (*Dacus dorsalis*) was trapped in Dade County, FLORIDA, in December 1969, no flies were found in 1970 in that State. Seven adults were trapped in Orange and Los Angeles Counties, CALIFORNIA, during the period September 4 through October 12, 1970. Intensive trapping and treatment continued. No larvae were found.

The first PINK BOLLWORM (*Pectinophora gossypiella*) moth catch in the Kern County, CALIFORNIA, eradicative treatment area was July 16 near Pumpkin Center. Continued trapping revealed 12 additional moth catch areas. During October, two larvae were found in the field where the first moth was caught in 1970. One larva was found in the field where the third moth was caught. These three larvae were the first found in Kern County since the five found in 1967. Five moths were trapped in Kern County in 1969, but no larvae were found. Release of sterile moths continued in Kern County during 1970, with 99,723,888 released. In the Coachella Valley, sterile moths were released beginning March 16. On August 10, biological control was abandoned after the release of 83,849,700 sterile moths failed to contain the infestation. Eight pink bollworm larvae were collected from a single cotton plant growing as an ornamental in a residential area within the city limits of San Diego. This is the second such isolated occurrence in San Diego in 2 years. In Redington, ARIZONA, a total of 74 larvae was recovered from nine bales of cotton produced in the isolated field where 1,934,800 sterile moths were released during the period May 1 through November 20, 1970. Early pink bollworm infestations were heavier throughout Arizona than in the past two years. Pink bollworm larvae were found infesting hibiscus plants at a nursery in Yuma for a first record for that host in Arizona. Larvae were moderate in an okra planting in the south Phoenix area of Maricopa County. Late-planted cotton in Graham County was 100 percent infested near Safford.

Pink bollworm was generally light in NEW MEXICO cotton through September. Buildup occurred in October. Green bolls in many fields of southern Dona Ana County near the Texas State line were heavily infested late in the season. Infestations continued light in Chaves County. Buildups occurred in Eddy County, with populations severely damaging late cotton. Hexalure traps were efficient in catching adults. Bloom and green boll inspections in TEXAS showed light populations generally, except in San Patricio and Brooks Counties. Infestations were generally light over all the State; however, in the Trans-Pecos area, infestations ran as high as 95 percent.

Gin trash and lint cleaner inspections in western TENNESSEE were negative for pink bollworm. A native male was collected in a trap at Key Largo, Monroe County, FLORIDA, October 13. All traps operated in ALABAMA, GEORGIA, LOUISIANA, ARKANSAS, MISSISSIPPI, and SOUTH CAROLINA failed to catch any pink bollworm moths.

The PISTACHIO SEED CHALCID (Megastigmus pistaciae) survey continued in CALIFORNIA. Sticky-board traps were deployed as a detection tool in Butte, Fresno, Glenn, Madera, Sacramento, Solano, Tehama, and Tulare Counties. No M. pistaciae were recovered during the survey. Visual inspections for adult emergence holes in Glenn and Tehama Counties revealed no evidence of infestation.

Diseased RANGE CATERPILLAR (Hemileuca oliviae) larvae were found in Colfax County, NEW MEXICO. Over 300,000 acres were reported lightly to moderately infested in Lincoln County. Controls were applied by ranchers in Union, Harding, and Colfax Counties. Results were very good. Approximately 60,000 acres were found infested in Las Animas County, COLORADO, with populations of up to 7 larvae per square yard.

SOYBEAN CYST NEMATODE (Heterodera glycines) was recovered from over 15,000 acres not previously found infested. Spread was notable in ILLINOIS, INDIANA, KENTUCKY, FLORIDA, LOUISIANA, MISSISSIPPI, NORTH CAROLINA, and TENNESSEE. Several fields in the Boothill area of Missouri suffered damage to Dyer and Pickett variety soybeans. Damage was noted to the same varieties of soybeans in North Carolina and Tennessee. Damage exceeds any loss sustained in North Carolina in prior years. Loss in Tennessee was estimated at 2,250,400 bushels (2 bushels per acre) valued at $3,137,732. Infested properties were found for the first time in Ashley, Drew, Franklin, and Pulaski Counties, ARKANSAS; Benton, Carroll, Leflore, Pontotoc, Tallahatchie, and Tippah Counties, Mississippi; Martin and Duplin Counties, North Carolina; and Decatur County, Tennessee. Surveys in ALABAMA, GEORGIA, SOUTH CAROLINA, TEXAS, OKLAHOMA, and IOWA were negative.

Storage inspection for SWEETPOTATO WEEVIL (Cylas formicarius elegantulus) was conducted in the Southern States. New infested properties were found in Washington, Livingston, St. Helena, Caddo, Avoyelles, East Baton Rouge, East Feliciana, West Feliciana, and Rapides Parishes, LOUISIANA. A new county record was established in Clarke County, MISSISSIPPI, while new infestations were found in the infested counties of Covington and Pike. For the third year, a storage house in Tabor City, NORTH CAROLINA, was found infested. Sweetpotato weevil was found in Decatur County, GEORGIA, and in several areas of ALABAMA. No sweetpotato weevil was found during survey in SOUTH CAROLINA.

WESTERN GRAPE LEAF SKELETONIZER (Harrisina brillians) specimens were taken at Clovis, Fresno County, CALIFORNIA. A moth was taken at Stratford, Kings County, and a new infestation was found in mid-July in Siskiyou County. This infestation is 200 miles from the nearest commercial grapes and is in wild grapes along the Klamath River.

WEST INDIAN SUGARCANE ROOT BORER (Diaprepes abbreviatus) damage appeared in 2 citrus groves at Apopka, Orange County, FLORIDA, in November. Definite symptoms of decline showed on trees. Girdling of the tap root was noted on 2 trees pulled from one grove. Larvae were recovered around one tree root. No spread of infestation was noted outside the regulated area of Orange County. The population was generally light and reduced from 1969.

Infestations of WHITEFRINGED BEETLES (Graphognathus spp.) continued to be found in VIRGINIA. Surveys revealed infestations in Falls Church and in Arlington County. Spread was noted in Fairfax County. Late fall surveys revealed new records for Prince William and Pittsylvania Counties and the city of Petersburg. Movement of infested soil to the Jefferson Memorial in the DISTRICT OF COLUMBIA necessitated eradicative measures. Whitefringed beetles were found for the first time in Chatham, Davie, Durham, Polk, and Rutherford Counties, NORTH CAROLINA, and in Aiken, Anderson, Greenville, Kershaw, and York Counties, SOUTH CAROLINA. In GEORGIA, larvae were light in a tobacco field in Lanier County, light on peanuts in Decatur and Macon Counties, moderate on peanuts in Wheeler County, and heavy on potato tubers in Coffee County. Madison, Haralson, and Douglas were new county records for Georgia. Whitefringed beetle larvae, 3-4 per plant, severely damaged an entire 8-acre field of newly set flue-cured tobacco early in April near Jennings, Hamilton County, FLORIDA. Chemical treatment and replanting were necessary. This was a new county record. Adults were heavy on soybeans at Quincy, Gadsden County, and at Marianna, Jackson County.

Whitefringed beetle infestations now occur in all 67 counties of ALABAMA. First larval damage of the 1970 season to corn occurred in Houston County, June 6. First adults of the season were reported June 2 in Jefferson County and June 4 in Houston and Mobile Counties. In 15 southern counties, damage to corn was estimated at $351,000 and larval damage to soybeans was placed at $175,300, both excluding control costs. These pests damaged numerous peanut fields in southeast Alabama, with first larval damage reported May 20 at Ashford, Houston County. Damage to peanuts was more severe in 1970 than for several years with an estimated loss of $300,000 in 15 southern counties. Larval damage to cotton in southern Alabama, excluding control costs, was estimated to be $101,500. A survey of larval damage to general garden and other vegetable crops in 15 southern counties indicated an estimated $206,400 crop loss and replanting cost due to these pests. An additional $277,300 was spent by growers in Alabama for controls on corn, cotton, peanuts, soybeans, and vegetables.

Whitefringed beetles spread locally in TENNESSEE, with Milan Arsenal in Gibson County being infested for first time. In MISSOURI, the first adults of the season were found June 18. By June 23 adults averaged 2 per plant in a 2-acre field of wild aster in Dunklin County. Two new county records were established in TEXAS, with the finding of whitefringed beetles in Jasper and Tyler Counties. Other new counties or parishes infested included Union, Lawrence, and Clay Counties, ARKANSAS; Warren County, KENTUCKY; and Caddo, Grant, and Iberville Parishes, LOUISIANA. Surveys conducted in the noninfested States of ILLINOIS, OHIO, WEST VIRGINIA, DELAWARE, PENNSYLVANIA, and NEW YORK, and in the DISTRICT OF COLUMBIA were negative.

Eradication treatment of WHITE GARDEN SNAIL (Theba pisana) continued in CALIFORNIA. Survey at Manhattan Beach, Los Angeles County, revealed no live snails.

The WOOLLY WHITEFLY (Aleurothrixus floccosus) infestation in CALIFORNIA is limited to San Diego, San Diego County, and is under eradicative treatment. Some extension of the infestation was noted late in 1970.

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